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THE PRIMITIVE HOME OF THE ARYANS.<sup>1</sup>

IN my address to the anthropological section of the British Association in 1887, I stated, that, in common with many other anthropologists and comparative philologists I had come to the conclusion that the primitive home of the Aryans was to be sought in north-eastern Europe. The announcement excited a flutter in the newspapers, many of whose readers had probably never heard of the Aryans before, while others of them had the vaguest possible idea of what was meant by the name.

Unfortunately it is a name which, unless carefully defined, is likely to mislead or confuse. It was first introduced by Professor Max Müller, and applied by him in a purely linguistic sense. The "discovery" of Sanscrit and the researches of the pioneers of comparative philology had shown that a great family of speech existed, comprising Sanscrit and Persian, Greek and Latin, Teutonic and Slav, all of them sister-languages descended from a common parent, of which, however, no literary monuments survived. In place of the defective or cumbersome titles of "Indo-German," "Indo-European," and the like, which had been suggested for it, Professor Max Müller proposed to call it "Aryan,"—a title derived from the Sanscrit *Arya*, interpreted "noble" in later Sanscrit, but used as a national name in the hymns of the Rig-Veda.

It is much to be regretted that the name has not been generally adopted. Such is the case, however, and it is to-day like a soul seeking a body in which to find a habitation. But the name is an excellent one, though the philologists of Germany, who govern us in such matters, have refused to accept it in the sense proposed by its author; and we are therefore at liberty to discover for it a new abode, and to give it a new scientific meaning.

In the enthusiasm kindled by the sight of the fresh world that was opening out before them, the first disciples of the science of comparative philology believed that they had found the key to all the secrets of man's origin and earlier history. The parent-speech of the Indo-European languages was entitled the *Ursprache*, or "Primeval Language;" and its analysis, it was imagined, would disclose the elements of articulate speech, and the process whereby they had developed into the manifold languages of the present world. But this was not enough. The students of language went even further. They claimed not only the domain of philology as their own, but the domain of ethnology as well. Language was confounded with race; and the relationship of tribe with tribe, of nation with nation, was determined by the languages they spoke. If the origin of a people was required, the question was summarily decided by tracing the origin of its language. English is, on the whole, a Teutonic language, and therefore the whole English people must have a Teutonic ancestry. The dark-skinned Bengali speaks languages akin to our own: therefore the blood which runs in his veins must be derived from the same source as that which runs in ours.

The dreams of universal conquest indulged in by a young science soon pass away as facts accumulate and the limit of its powers is more and more strictly determined. The *Ursprache* has become a language of comparatively late date in the history of linguistic development, which differed from Sanscrit or Greek only in its fuller inflexional character. The light its analysis was believed to cast on the origin of speech has proved to be the light of a will-o'-the-wisp, leading astray and perverting the energies of those who might have done more profitable work. The mechanism of primitive language often lies more clearly revealed in a modern Bushman's dialect or the grammar of Eskimo than in that much-vaunted *Ursprache* from which such great things were once expected by the philosophy of human speech.

Ethnology has avenged the invasion of its territory by linguistic science, and has in turn claimed a province which is not its own. It is no longer the comparative philologist, but the ethnologist, who now and again uses philological terms in an ethnological sense, or settles racial affinities by an appeal to language. The philologist first talked about an "Indo-European race." Such an expression could now be heard only from the lips of a youthful ethnologist.

As soon as the discovery was made that the Indo-European languages were derived from a common mother, scholars began to ask where that common mother-tongue was spoken. But it was agreed on all hands that this must have been somewhere in Asia. Theology and history alike had taught that mankind came from the East, and from the East accordingly the *Ursprache* must have come too. Hitherto Hebrew had been generally regarded as the original language of humanity. Now that the Indo-European *Ursprache* had deprived Hebrew of its place of honor, it was natural, if not inevitable, that, like Hebrew, it should be accounted of Asiatic origin. Moreover, it was the discovery of Sanscrit that had led to the discovery of the *Ursprache*. Had it not been for Sanscrit, with its copious grammar, its early literature, and the light which it threw on the forms of Greek and Latin speech, comparative philology might never have been born. Sanscrit was the magician's wand which had called the new science into existence, and without the help of Sanscrit the philologist would not have advanced beyond the speculations and guesses of classical scholars. What wonder, then, if the language which had thus been a key to the mysteries of Greek and Latin, and which seemed to embody older forms of speech than they, should have been assumed to stand nearer to the *Ursprache* than the cognate languages of Europe? The assumption was aided by the extravagant age assigned to the monuments of Sanscrit literature. The poems of Homer might be old; but the hymns of the Veda, it was alleged, mounted back to a primeval antiquity, while the Institutes of Manu represented the oldest code of laws existing in the world.

There was yet another reason which contributed to the belief that Sanscrit was the first-born of the Indo-European family. The founders of comparative philology had been preceded in their analytic work by the ancient grammarians of India. It was from Pāṇini and his predecessors that the followers of Bopp inherited their doctrine of roots and suffixes and their analysis of Indo-European words. The language of the Veda had been analyzed two thousand years ago as no other single language had ever been analyzed before or since. Its very sounds had been carefully probed and distinguished, and an alphabet of extraordinary completeness had been devised to represent them. It appeared as if the elements out of which the Sanscrit vocabulary and grammar had grown had been laid bare in a way that was possible in no other language; and in studying Sanscrit, accordingly, the scholars of Europe seemed to feel themselves near to the very beginnings of speech.

But it was soon perceived that if the primitive home of the Indo-European languages were Asia, they themselves ought to exhibit evidences of the fact. There are certain objects and certain phenomena which are peculiar to Asia, or, at all events, are not to be found in Europe; and words expressive of these ought to be met with in the scattered branches of the Indo-European family. If the parent-language had been spoken in India, the climate in which they were born must have left its mark upon the face of its off-spring.

But here a grave difficulty presented itself. Men have short memories, and the name of an object which ceases to come before the senses is either forgotten or transferred to something else. The tiger may have been known to the speakers of the parent-language, but the words that denoted it would have dropped out of the vocabulary of the derived languages which were spoken in Europe. The same word which signifies an oak in Greek, signifies a beech in Latin. We cannot expect to find the European languages employing words with meanings which recall objects met with only in Asia.

How, then, are we to force the closed lips of our Indo-European languages, and compel them to reveal the secret of their birth-place? Attempts have been made to answer this question in two different ways.

On the one hand, it has been assumed that the absence in a particular language, or group of languages, of a term which seems to have been possessed by the parent-speech, is evidence that the object denoted by it was unknown to the speakers. But the assumption is contradicted by experience. Because the Latin *equus* has been replaced by *caballus* in the modern Romanic languages, we cannot conclude that the horse was unknown in western Europe after the fall of the Roman Empire. The native Basque word for

<sup>1</sup> From The Contemporary Review.

a "knife" (*haistoa*) has been found by Prince L.-L. Bonaparte in a single obscure village; elsewhere it has been replaced by terms borrowed from French or Spanish: yet we cannot suppose that the Basques were unacquainted with instruments for cutting until they had been furnished with them by their French and Spanish neighbors. Greek and Latin have different words for "fire:" we cannot argue from this that the knowledge of fire was ever lost among any of the speakers of the Indo-European tongues. In short, we cannot infer from the absence of a word in any particular language that the word never existed in it: on the contrary, when a language is known to us only in its literary form, it is safe to say that it must have employed many words besides those contained in its dictionary.

A good illustration of the impossibility of arriving at any certain results as long as we confine our attention to words which appear in one but not in another of two cognate languages, is afforded by the Indo-European words which denote a sheet of water. There is no word of which it can be positively said that it is found alike in the Asiatic and the European branches of the family. Lake, ocean, even river and stream, go by different names. A doubt hangs over the word for "sea:" it is possible, but only possible, that the Sanscrit *páthas* is the same word as the Greek *πῦθος*, the etymology of which is not yet settled. Nevertheless, we know that the speakers of the parent-language must have been acquainted, if not with the sea, at all events with large rivers. *Naus* ("a ship") is the common heritage of Sanscrit and Greek, and must thus go back to the days when the speakers of the dialects which afterwards developed into Sanscrit and Greek still lived side by side. It survives, like a fossil in the rocks, to assure us that they were a water-faring people, and that the want of a common Indo-European word for "lake" or "river" is no proof that such a word may not have once existed.

The example I have just given illustrates the second way in which the attempt has been made to solve the riddle of the Indo-European birthplace. It is the only way in which the attempt can succeed. Where precisely the same word, with the same meaning, exists in both the Asiatic and the European members of the Indo-European family, — always supposing, of course, that it has not been borrowed by either of them, — we may conclude that it also existed in the parent-speech. When we find the Sanscrit *as'was* and the Latin *equus*, the exact phonetic equivalents of one another, both alike signifying "horse," we are justified in believing that the horse was known in the country from which both languages derived their ancestry. Though the argument from a negative proves little or nothing, the argument from agreement proves a great deal.

The comparative philologist has by means of it succeeded in sketching in outline the state of culture possessed by the speakers of the parent-language, and the objects which were known to them. They inhabited a cold country. Their seasons were three in number, perhaps four, and not two, as would have been the case had they lived south of the temperate zone. They were nomad herdsmen, dwelling in hovels, similar, it may be, to the low, round huts of sticks and straw built by the Kabyles on the mountain-slopes of Algeria. Such hovels could be erected in a few hours, and left again as the cattle moved into higher ground with the approach of spring, or descended into the valleys when the winter advanced. The art of grinding corn seems to have been unknown, and crushed spelt was eaten instead of bread. A rude sort of agriculture was, however, already practised; and the skins worn by the community, with which to protect themselves against the rigors of the climate, were sewn together by means of needles of bone. It is even possible that the art of spinning had already been invented, though the art of weaving does not appear to have advanced beyond that of plaiting reeds and withies. The community still lived in the stone age. Their tools and weapons were made of stone or bone; and, if they made use of gold or meteoric iron, it was of the unwrought pieces picked up from the ground, and employed as ornaments. Of the working of metals, they were entirely ignorant. As among savage tribes generally, the various degrees of relationship were minutely distinguished and named, even the wife of a husband's brother receiving a special title; but they could count at least as far as a hundred. They believed in a multitude of ghosts and

goblins, making offerings to the dead, and seeing in the bright sky a potent deity. The birch, the pine, and the withy were known to them; so also were the bear and wolf, the hare, the mouse, and the snake, as well as the goose and raven, the quail and the owl. Cattle, sheep, goats, and swine were all kept. The dog had been domesticated, and in all probability also the horse. Last, but not least, boats were navigated by means of oars, the boats themselves being possibly the hollowed trunks of trees.

This account of the primitive community is necessarily imperfect. There must have been many words, like that for "river," which were once possessed by the parent-speech, but afterwards lost in either the eastern or western branches of the family. Such words the comparative philologist has now no means of discovering: he must accordingly pass them over along with the objects or ideas which they represent. The picture he can give us of the speakers of the primeval Indo-European language can only be approximately complete. Moreover, it is always open to correction. Some of the words we now believe to have been part of the original stock carried away by the derived dialects of Asia and Europe may hereafter turn out to have been borrowed by one of these dialects from another, and not to have been a heritage common to both. It is often very difficult to decide whether we are dealing with borrowed words or not. If a word has been borrowed by a language before the phonetic changes had set in which have given the language its peculiar complexion, or while they were in the course of progress, it will undergo the same alteration as native words containing the same sounds. The phonetic changes which have marked off the High German dialects from their sister-tongues do not seem to go back beyond the fall of the Roman Empire, and words borrowed from Latin before that date will accordingly have submitted to the same phonetic changes as words of native origin. Indeed, when once a word is borrowed by one language from another, and has passed into common use, it soon becomes naturalized, and is assimilated in form and pronunciation to the words among which it has come to dwell. A curious example of this is to be found in certain Latin words which made their way into the Gaelic dialects in the fourth or fifth century. We often find a Gaelic *c* corresponding to a Welsh *p*, both being derived from a labialized guttural or *qu*, and the habit was accordingly formed of regarding a *c* as the natural and necessary representative of a foreign *p*. When, therefore, words like the Latin *pascha* and *purpura* were introduced by Christianity into the Gaelic branch of the Celtic family, they assumed the form of *caisg* and *corcur*.

It is clear that such borrowings can only take place where the speakers of two different languages have been brought into contact with one another. Before the age of commercial intercourse between Europe and India we cannot suppose that European words could have been borrowed by Sanscrit or Persian, or Sanscrit and Persian words by the European languages. But the case is quite otherwise, if, instead of comparing together the vocabularies of the eastern and western members of the Indo-European stock, we wish to compare only western with western, or eastern with eastern. There our difficulties begin, and we must look to history, or botany, or zoölogy for aid. From a purely philological point of view, the English *hemp*, the Old High German *hanf*, the Old Norse *hanfr*, and the Latin *cannabis*, might all be derived from a common source, and point to the fact that hemp was known to the first speakers of the Indo-European languages in north-western Europe. But the botanists tell us that this could not have been the case. Hemp is a product of the East, which did not originally grow in Germany, and consequently both the plant itself and the name by which it was called must have come from abroad. So, again, the lion bears a similar name in Greek and Latin, in German, in Slavonic, and in Celtic. But the only part of Europe in which the lion existed at a time when the speakers of an Indo-European language could have become acquainted with it were the mountains of Thrace, and it must accordingly have been from Greek that its name spread to the other cognate languages of the West.

It has been needful to enter into these details before we can approach the question, "What was the original home of the parent Indo-European language?" They have been too often ignored or forgotten by those who have set themselves to answer the question,

and to this cause must be ascribed the larger part of the misunderstandings and false conclusions to which the inquiry has given birth.

Until a few years ago I shared the old belief that the parent-speech had its home in Asia, probably on the slopes of the Hindu Kush. The fact that the languages of Europe and Asia alike possessed the same words for "winter" and "ice" and "snow," and that the only two trees whose names were preserved by both — the "birch" and the "pine" — were inhabitants of a cold region, proved that this home did not lie in the tropics. But the uplands of the Hindu Kush, or the barren steppes in the neighborhood of the Caspian Sea, or even the valleys of Siberia, would answer to the requirements presented by such words. Taken by themselves, they were fully compatible with the view that the first speakers of the Indo-European tongues were an Asiatic people.

But when I came to ask myself what were the grounds for holding this view, I could find none that seemed to me satisfactory. There is much justice in Dr. Latham's remark that it is unreasonable to derive the majority of the Indo-European languages from a continent to which only two members of the group are known to belong, unless there is an imperative necessity for doing so. These languages have grown out of dialects once existing within the parent-speech itself, and it certainly appears more probable that two of such dialects or languages should have made their way into a new world, across the bleak plains of Tartary, than that seven or eight should have done so. The argument, it is true, is not a strong one, but it raises at the outset a presumption in favor of Europe. Before the dialects had developed into languages, their speakers could not have lived far apart. There is, in fact, evidence of this in the case of Sanscrit and Persian; and a more widely spread primitive community is implied by the numerous languages of Europe than by the two languages of Asia. A widely spread community, however, is less likely to wander far from its original seat than a community of less extent, more especially when it is a community of herdsmen, and the tract to be traversed is long and barren.

Apart from the general prejudice in favor of an Asiatic origin, due to old theological teaching and the effect of the discovery of Sanscrit, I can find only two arguments which have been supposed to be of sufficient weight to determine the choice of Asia rather than of Europe as the cradle of Indo-European speech. The first of these arguments is linguistic; the second is historical, or rather quasi-historical. On the one hand, it has been laid down by eminent philologists that the less one of the derived languages has deflected from the parent-speech, the more likely it is to be geographically nearer to its earliest home. The faithfulness of the record is a test of geographical proximity. As Sanscrit was held to be the most primitive of the Indo-European languages, to reflect most clearly the features of the parent-speech, the conclusion was drawn that that parent-speech had been spoken at no great distance from the country in which the hymns of the Rig-Veda were first composed. The conclusion was supported by the second argument drawn from the sacred books of Parsaism. In the Vendidad the migrations of the Iranians were traced back through the successive creations of Ormazd to Airyanem Vaējō, "the Aryan Power," which Lassen localized near the sources of the Oxus and Jaxartes. But Bréal and De Harlez have shown that the legends of the Vendidad, in their present form, are late and untrustworthy, — later, in fact, than the Christian era;<sup>1</sup> and, even if we could attach any historical value to them, they would tell us only from whence the Iranians believed their own ancestors to have come, and would throw no light on the cradle of the Indo-European languages as a whole. The first argument is one which I think no student of language would any longer employ. As Professor Max Müller has said, it would suffice to prove that the Scandinavians emigrated from Iceland. But to those who would still urge it, I must repeat what I have said elsewhere. Although in many respects Sanscrit has preserved more faithfully than the European languages the forms of primitive Indo-European grammar, in many other respects the converse is the case. In the latest researches

into the history of Indo-European grammar, Greek holds the place once occupied by Sanscrit. The belief that Sanscrit was the elder sister of the family led to the assumption that the three short vowels *ā*, *ē*, and *ō* have all originated from an earlier *ā*. I was, I believe, the first to protest against this assumption in 1874, and to give reasons for thinking that the single monotonous *ā* of Sanscrit resulted from the coalescence of three distinct vowels. The analogy of other languages goes to show that the tendency of time is to reduce the number of vocalic sounds possessed by a language, not the contrary. In place of the numerous vowels possessed by ancient Greek, modern Greek can now show only five, and cultivated English is rapidly merging its vowel sounds into the so-called "neutral" *ə*. Since my protest the matter has been worked out by Italian, German, and French scholars; and we now know that it is the vocalic system of the European languages rather than of Sanscrit which most faithfully represents the oldest form of Indo-European speech. The result of the discovery, for discovery it must be called, has been a complete revolution in the study of Indo-European etymology, and still more of Indo-European grammar; and whereas ten years ago it was Sanscrit which was invoked to explain Greek, it is to Greek that the "new school" now turns to explain Sanscrit. The comparative philologist necessarily cannot do without the help of both. The greater the number of languages he has to compare, the sounder will be his inductions; but the primacy which was once supposed to reside in Asia has been taken from her. It is Greek, and not Sanscrit, which has taught us what was the primitive vowel of the reduplicated syllable of the perfect and the augment of the aorist, and has thus narrowed the discussion into the origin of both.

Until quite recently, however, the advocates of the Asiatic home of the Indo-European languages found a support in the position of the Armenian language. Armenian stands midway, as it were, between Persia and Europe, and it was imagined to have very close relations with the old language of Persia. But we now know that its Persian affinities are illusory, and that it must really be grouped with the languages of Europe. What is more, the decipherment of the cuneiform inscriptions of Van has cast a strong light on the date of its introduction into Armenia. These inscriptions are the records of kings whose capital was at Van, and who marched their armies in all directions during the ninth, eighth, and seventh centuries before our era. The latest date that can as yet be assigned to any of them is B.C. 640. At this time there were still no speakers of an Indo-European language in Armenia. The language of the inscriptions has no connection with those of the Indo-European family, and the personal and local names occurring in the countries immediately surrounding the dominions of the Vannic kings, and so abundantly mentioned in their texts, are of the same linguistic character as the Vannic names themselves.

The evidence of classical writers fully bears out the conclusions to be derived from the decipherment of the Vannic inscriptions. Herodotus (vii. 73) tells us that the Armenians were colonists from Phrygia, the Phrygians themselves having been a Thracian tribe which had migrated into Asia. The same testimony was borne by Eudoxos,<sup>1</sup> who further averred that the Armenian and Phrygian languages resembled one another. The tradition must have been recent in the time of Herodotus, and we shall probably not go far wrong if we assign the occupation of Armenia by the Phrygian tribes to the age of upheaval in western Asia which was ushered in by the fall of the Assyrian Empire. Professor Fick has shown that the scanty fragments of the Phrygian language that have survived to us belong to the European branch of the Indo-European family, and thus find their place by the side of Armenian.

Instead, therefore, of forming a bridge between Orient and Occident, Armenian represents the furthestmost flow of Indo-European speech from West to East. And this flow belongs to a relatively late period. Apart from Armenian, we can discover no traces of Indo-European occupation between Media and the Halys until the days when Iranian Ossetes settled in the Caucasus, and the mountaineers of Kurdistan adopted Iranian dialects. I must reiterate here what I have said many years ago: if there is one fact which the Assyrian monuments make clear and indubitable, it is that up to the closing days of the Assyrian monarchy no Indo-European

<sup>1</sup> Bréal, *Mélanges de Mythologie et de Linguistique* (1878), pp. 187-215; De Harlez, *Introduction à l'Étude de l'Avesta*, pp. cxcii., *sqq.* Compare Darmesteter's *Introduction to the Zend-Avesta*, part 1, in *The Sacred Books of the East*.

<sup>1</sup> According to Eustathios (*in Dion.* v. 694).

languages were spoken in the vast tract of civilized country which lay between Kurdistan and western Asia Minor. South of the Caucasus they were unknown until the irruption of the Phrygians into Armenia. Among the multitudinous names of persons and localities belonging to this region which are recorded in the Assyrian inscriptions during a space of several centuries, there is only one which bears upon it the Indo-European stamp. This is the name of the leader of the Cimmerians, — a nomad tribe from the north-east which descended upon the frontiers of Assyria in the reign of Esar-haddon, and was driven by him into Asia Minor. The fact is made the more striking by the further fact, that, as soon as we clear the Kurdish ranges and enter Median territory, names of Indo-European origin meet us thick and fast. We can draw but one conclusion from these facts. Whether the Indo-European languages of Europe migrated from Asia, or whether the converse were the case, the line of march must have been northward of the Caspian, through the inhospitable steppes of Tartary and over the snow-covered heights of the Ural Mountains.

An ingenious argument has lately been put forward, which at first sight seems to tell in favor of the Asiatic origin of Indo-European speech. Dr. Penka has drawn attention to the fact that several of the European languages agree in possessing the same word for "eel;" and that, whereas the eel abounds in the rivers and lakes of Scandinavia, it is unknown in those cold regions of western Asia where, as we have seen, it has been proposed to place the cradle of the Indo-European family. But it is a curious fact that in Greek and Latin, and apparently also in Lithuanian, the word for "eel" is a diminutive derived from a word which denotes a snake or snake-like creature. This, it has been urged, may be interpreted to mean that the primeval habitat of the Indo-European languages was one where the snake was known but the eel was not. The argument, however, cannot be pressed. We all agree that the first speakers of the Indo-European languages lived on the land, not on the water, and that they were herdsmen rather than fishermen. Naturally, therefore, they would become acquainted with the snake before they became acquainted with the eel, however much it might abound in the rivers near them, and its resemblance to the snake would lend it its name. In Celtic the eel is called "a water-snake," and to this day a prejudice against eating it on the ground that it is a snake exists in Celtic districts. All we can infer from the diminutives *anguilla*, *ἐγγελευς*, is that the Italians and Greeks in the first instance gave the name to the fresh-water eel, and not to the huge conger.

I cannot now enter fully into the reasons which have led me gradually to give up my old belief in the Asiatic origin of the Indo-European tongues, and to subscribe to the views of those who would refer them to a northern European birthplace. The argument is a complicated one, and is necessarily of a cumulative character. The individual links in the chain may not be strong, but collectively they afford that amount of probability which is all we can hope to attain in historical research. Those who wish to study them may do so in Dr. Penka's work on the "Herkunft der Arier," published in 1886. His hypothesis that southern Scandinavia was the primitive "Aryan home" seems to me to have more in its favor than any other hypothesis on the subject which has as yet been put forward. It needs verification, it is true; but if it is sound, the verification will not be long in coming. A more profound examination of Teutonic and Celtic mythology, a more exact knowledge of the words in the several Indo-European languages which are not of Indo-European origin, and the progress of archæological discovery, will furnish the verification we need.

Meanwhile it must be allowed that the hypothesis has the countenance of history. Scandinavia, even before the sixth century, was characterized as "the manufactory of nations;"<sup>1</sup> and the voyages and settlements of the Norse vikings offer an historical illustration of what the prehistoric migrations and settlements of the speakers of the Indo-European languages must have been. They differed from the latter only in being conducted by sea, whereas the prehistoric migrations followed the valleys of the great rivers. It was not until the age of the Roman Empire that the northern nations became acquainted with the sailing-boat; our English

"sail" is the Latin *sagulum* ("the little cloak of the soldier") borrowed by the Teutons along with its name, and used to propel their boats in imitation of the sails of the Roman vessels. The introduction of the sail allowed the inhabitants of the Scandinavian "hive" to push boldly out to sea, and ushered in the era of Saxon pirates and Danish invasions.

Dr. Penka's arguments are partly anthropological, partly archæological. He shows that the Celts and Teutons of Roman antiquity were the tall, blue-eyed, fair-haired, dolichocephalic race which is now being fast absorbed in Celtic lands by the older inhabitants of them. The typical Frenchman of to-day has but little in common with the typical Gaul of the age of Cæsar. The typical Gaul was, in fact, as much a conqueror in Gallia as he was in Galatia, or, as modern researches have shown, as the typical Celt was in Ireland. It seems to have been the same in Greece. Here, too, the golden-haired hero of art and song was a representative of the ruling class, of that military aristocracy which overthrew the early culture of the Peloponnese, and of whom tradition averred that it had come from the bleak North. Little trace of it now remains: it is rarely that the traveller can discover any longer the modern kinsfolk of the golden-haired Apollo or the blue-eyed Athênê.

If we would still find the ancient blonde race of northern Europe in its purity, we must go to Scandinavia. Here the prevailing type of the population is still that of the broad-shouldered, long-headed blondes who served as models for the Dying Gladiator. And it is in southern Scandinavia alone that the prehistoric tumuli and burying-grounds yield hardly any other skeletons than those of the same tall dolichocephalic race which still inhabits the country. Elsewhere such skeletons are either wanting or else mixed with the remains of other races. It is therefore reasonable to conclude that it was from southern Scandinavia that those bands of hardy warriors originally emerged who made their way southward and westward, and even eastward; the Celts of Galatia penetrating, like the Phrygians before them, into the heart of Asia Minor. The Norse migrations in later times were even more extensive, and what the Norse vikings were able to achieve could have been achieved by their ancestors centuries before.

Now, the Celts and Teutons of the Roman age spoke Indo-European languages. It is more probable that the subject populations should have been compelled to learn the language of their conquerors than that the conquerors should have taken the trouble to learn the language of their serfs. We know, at any rate, that it was so in Ireland. Here the old "Ivernian" population adopted the language of the small band of Celtic invaders that settled in its midst. It is only where the conquered possess a higher civilization than the conquerors, above all, where they have a literature and an organized form of religion, that Franks will adapt their tongues to Latin speech, or Manchus learn to speak Chinese. Moreover, in southern Scandinavia, where we have archæological evidence that the tall blonde race was scarcely at any time in close contact with other races, it is hardly possible for it to have borrowed its language from some other people. The Indo-European languages still spoken in the country must, it would seem, be descended from languages spoken there from the earliest period to which the evidence of human occupation reaches back. The conclusion is obvious: southern Scandinavia and the adjacent districts must be the first home and starting-point of the western branch of the Indo-European family.

If we turn to the eastern branch, we find that the farther east we go, the fainter become the traces of the tall blonde race, and the greater is the resemblance between the speakers of Indo-European languages and the native tribes. In the highlands of Persia, tall, long-headed blondes with blue eyes can still be met with; but, as we approach the hot plains of India, the type grows rarer and rarer until it ceases altogether. An Indo-European dialect must be spoken in India by a dark-skinned people before it can endure to the third and fourth generation. As we leave the frontiers of Europe behind us, we lose sight of the race with which Dr. Penka's arguments would tend to connect the parent-speech of the Indo-European family.

I cannot now follow him in the interesting comparison he draws between the social condition of the southern Scandinavians as dis-

<sup>1</sup> "Quasi officina gentium aut certe velut vagina nationum."—Jordanes, *De Getarum sive Gothorum origine*, ed. Closs, C. 4.

closed by the contents of the prehistoric "kitchen-middens," and the social condition of the speakers of the Indo-European parent-speech according to the sobered estimate of recent linguistic research. The resemblance is certainly very striking; though, on the other hand, it cannot be denied that archæological science is still in its infancy, and that Dr. Penka too often assumes that a word common to the European languages belonged to the parent-speech,—an assumption which will not, of course, be admitted by his opponents.

What more nearly concerns us here, however, is the name we should give to the race or people who spoke the parent-language. We cannot call them "Indo-Europeans:" that would lead to endless ambiguities, while the term itself has already been appropriated in a linguistic sense. Dr. Penka has called them "Aryans," and I can see no better title with which to endow them. The name is short; it has already been used in an ethnological as well as in a linguistic sense; and, since our German friends have rejected it in its linguistic application, it is open to every one to confine it to a purely ethnological meaning. I know that the author has protested against such an application of the term; but it is not the first time that a father has been robbed of his offspring, and he cannot object to the robbery when it is committed in the cause of science. For some time past the name of "Aryan" has been without a definition, while the first speakers of the Indo-European parent-speech have been vainly demanding a name; and the priests of anthropology cannot do better than lead them to the font of science, and there baptize them with the name of "Aryan."

A. H. SAYCE.

#### THE GRAIN PLANT-LOUSE.

THE present season is characterized by one of those widespread and very damaging insect-invasions that are so discouraging to the farmer, this time an onslaught on the wheat-crop by the grain *Aphis* or plant-louse, *Aphis avenæ*. This louse attacks wheat, barley, oats, and rye, and is to be found in small numbers on these grains every year. This year occurs one of those terrible attacks that seem to threaten very serious loss, extending from Ohio west to Indiana, and north to Grand Rapids, Mich. So abundant are these lice, that they have attracted wide attention and awakened serious alarm. For the last two weeks in June Mr. A. J. Cook, of the Agricultural College of Michigan, received daily numerous specimens of these lice with the inquiry, "What is to be the outcome of this attack?"

This is not the first season that this *Aphis avenæ* has come like a destroying flood upon the grain-fields. In 1861 the lice swarmed upon the cereal crops of New England and New York, at which time Dr. Asa Fitch fully described it in his sixth report. In 1866, and again ten years later, it did great damage in various sections of the West. We see, then, that this louse does not come yearly, but only at long intervals. Why is this? It is doubtless owing in some measure to the weather, but more to its insect enemies. Its enormous prolificness would make it as the sands of the seashore every year, except that some natural agent held it in check. Fitch describes three such enemies. Even now, as we visit the oat and wheat fields, we find many forms different from any previously described. These have short, rounded bodies, which are of a dirty-white color. The cause of this is that these are attacked by parasites, which are eating them up. These little benefactors are now busily engaged in the fields, laying the eggs that will destroy the lice. These minute parasitic insects lay a great many eggs, one in each louse, and their presence and prosperity mark the doom of the lice. Thus through the agency of these minute parasitic forms, aided by climatic influences, we are to be saved from a raid by this grain *Aphis* next year, and will be greatly benefited this year. Indeed, in some cases, these little friends will very likely save us from serious damage. Why the parasites are not able to come successfully to the rescue each year is still unknown. Dry weather is a great promoter of insect productiveness. It is more than probable that the exceeding drought of 1887, 1888, and of the April and May just past, together with the mild winter of 1888-1889, have had much to do with the present invasion. We might expect much aid from the frequent

June rains, but they were perhaps too late. Observation shows that the lice are more than holding their own: so we may conclude that the warm rains are not greatly depleting their ranks.

Where the lice are very numerous, as they seem to be over a widespread area of our country, they must do great injury. Where ten or twelve lice are collected about a single kernel of wheat, there is little hope for that kernel. Mr. Cook has counted one hundred and sixty lice on a single head of wheat. It is hoping too much of the little parasitic flies to expect them to save the present crop. We can but expect much injury, especially where the lice are in such countless numbers as are now seen in many of the wheat-fields of Indiana, Ohio, and Michigan.

The excellent specific against plant-louse ravages, the kerosene and soap mixture, cannot be used without much injury to the crop. To apply it might be like the jump from frying-pan to fire. Again: the lice are so protected by the close cluster of the kernels, that very likely the remedy would not be fully effective.

The name "green midge," which is going the rounds of the papers, is very incorrect, and should not be used. The Hessian-fly and wheat-midge are very different insects. These midges are two-winged flies, whose larvæ are footless maggots. They belong to the great two-winged fly order, *Diptera*, while these are plant-lice or *Aphides*, and belong to the order of bugs, or *Hemiptera*. Let all speak of this as the grain *Aphis*, or plant-louse, and not as the green midge, which is entirely wrong, as they are not always even green in color.

#### NOTES AND NEWS.

A SPECIAL limited Pullman train with dining and composite cars will leave the foot of Chambers Street, New York, via the Erie Railroad, on Monday, Aug. 5, at 9 o'clock A.M., for the accommodation of the members of the National Electric Light Association and their friends, who will attend the convention at Niagara Falls, Aug. 6, 7, and 8. One car will be reserved for gentlemen accompanied by ladies. Tickets on this train, including Pullman service, will cost ten dollars each. Return tickets (to be obtained at Niagara Falls), including Pullman service, will cost four dollars and sixty cents each. As the cost of this train must be guaranteed the road, all members are urged to remit ten dollars to the secretary at the earliest possible moment, for which they will receive their railway-tickets and Pullman seat-checks by return mail. Tickets may also be obtained at the offices of the *Electrical Review*, 13 Park Row, and the *Electrical World*, Times Building.

— The Boston *Herald* says that "some figures presented at the meeting of the United States Brewers' Association show a wonderful growth of the business during the last twenty-five years. For instance, receipts of the government from the internal revenue tax on fermented liquors amounted to about \$1,500,000 in 1863, when the tax was first imposed. In 1866 the figures rose to \$5,000,000; in 1879, to \$10,000,000; in 1882, to \$15,000,000; and last year the tax amounted to \$23,000,000. The quantity increased in the same ratio from 2,000,000 barrels in 1863 to over 24,000,000 in 1888. At this rate of growth, it is small wonder that Englishmen think they see a chance of making money by buying up American breweries."

— The San Francisco *Chronicle* says that "some of the New York dealers in California wines assert that the reason why the price of our wines in the East is so low is that growers dump quantities of sick wine on the market, and spoil the tone of the California product. They say that the grower sends on several hundred barrels of wine, which arrives in New York sick with the voyage, if not altogether sour, necessitating rest and new barrels before it is salable at all. These dealers go on to say, 'Perhaps the grower has no warehouse, no time to wait, no change of cooperage, no other wine to mix with: therefore he puts his wine on the market at a ridiculous price below what cooperage, freight, and insurance cost. He makes no money, and the buyer is disgusted with California wine.'"

— The French minister of commerce has appointed a committee for the purpose of organizing an international photographic congress to be held during the Paris Exhibition. The committee, headed by the well-known astronomer, Professor Janssen, have